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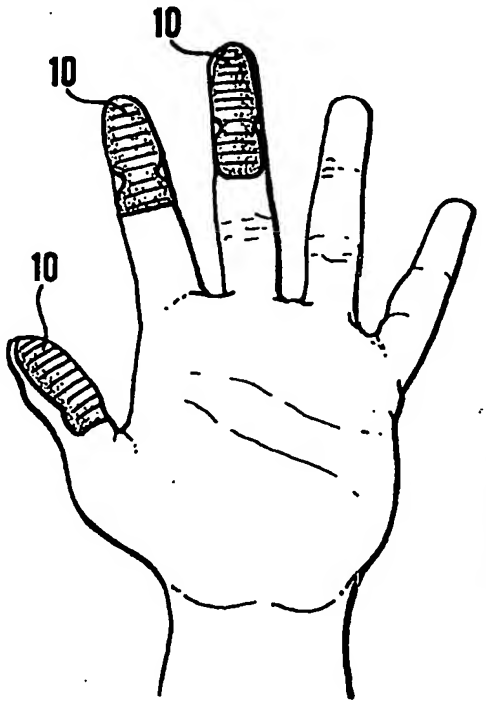
(54) Title: SELF-ADHESIVE PATCH FOR APPLICATION TO THE SKIN

(57) Abstract

A self-adhesive patch (10) is dimensioned and configured for application to a particular part of a user's body, e.g. a finger, the palm of a hand or the sole of a foot. The patch (10) protects the skin of the user and/or improves the user's grip on the ground or on an object being handled.



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Title - Self-Adhesive Patch for Application to the Skin

This invention relates to a self-adhesive patch for application to the skin of a user. In particular, the invention relates to a self-adhesive patch which serves to protect the area of skin to which it is applied, and/or to improve the user's grip on an article which is to be manipulated or handled.

Many fields of activity, notably industrial manufacturing processes and others, require objects to be manually handled and manipulated. Since the objects in question may have sharp edges, burrs or points, and may therefore be potentially damaging to the skin of the operative handling them, consideration must be given to protection of the skin. In other circumstances, or additionally, the objects may be difficult to grip, eg due to having a small size or very smooth surfaces.

Other fields of activity may involve the gripping of, for example, a ball or other item to be thrown or a bat or club for the striking of a ball. Again, the object in question may be difficult to grip, perhaps because the hands become sweaty as a result of the physical exertion involved.

Grip and protection of the skin may also be important in sporting or leisure activities which are conducted barefoot, eg around swimming pools or the like. In such cases, inadequate grip may result in falls and injuries, and the soles of the feet are also liable to injury by fragments of glass or other sharp objects.

Some at least of these difficulties may be addressed by the wearing of gloves or shoes. Gloves are often effective in providing protection, but suffer from a number of disadvantages, notably that they may impair the dexterity of the wearer and thereby interfere with his ability to manipulate small objects. Gloves may also be uncomfortable to wear and lead to the hands becoming hot and sweaty. In addition, gloves for industrial use tend to be manufactured in one size, or at best a small number of sizes, and may therefore not be of a very good fit for any particular user, further exacerbating the above problems. The wearing of shoes may be incompatible with the activity being performed, eg swimming.

There has now been devised a form of self-adhesive patch which overcomes or substantially mitigates the above disadvantages.

According to the invention, there is provided a self-adhesive patch dimensioned and configured for application to a particular part of a user's body.

The self-adhesive patch according to the invention is advantageous primarily in that it is easily applied and yet provides protection for those parts of the wearer's skin which most require protection. Other areas of the skin are left free with the result that the dexterity of the wearer is not substantially impaired and uncomfortable warming of, for example, the hands is avoided. Because the patch is dimensioned and configured for application to a particular area of the skin (for instance, the underside of a finger, the palm of the hand, or the sole of a foot) it fits well to that area.

The patch according to the invention may be formed from any suitable material. It is preferred that the material utilised be such as to enhance the gripping ability of the user. Presently preferred materials include rubbers or other elastomeric materials, as well as paper and the like, plastics materials and textile materials. In all cases one side of the material is preferably coated with an adhesive and, preferably, a release film or paper which is removed immediately before use to enable the adhesive to be contacted with the appropriate area of the skin. In one particularly preferred arrangement, the patch is of woven textile material, one side of the patch carrying an adhesive layer and a release paper, and the other side carrying grip-enhancing formations, eg discrete regions of a plastics material in a regular pattern. Alternatively, a textile material may be impregnated with rubber or other polymeric compounds. Patches may be produced in different colours, eg as colour-coding to indicate different types or textures. Graphic or textual material may also be printed on the patches. The materials utilised in the patch may be biodegradable.

The patch will most commonly have a thickness of less than 2mm, eg 1mm or 0.5mm or so. In general, the thickness should be sufficient to confer the desired degree of protection and/or grip without adversely affecting the movement of the part of the body to which it is applied.

The patch according to the invention may be provided with perforations to allow the skin beneath it to "breathe". Such perforations may also enhance the gripping properties of the patch.

Although for most applications the whole of the surface of the patch which is applied to the skin

will be coated with adhesive so that it adheres to the skin, in other cases it may be advantageous for a part of the underside of the patch to carry no adhesive but to be lined with, for example, gauze or lint. Such a patch may be applied to an area of skin which is damaged, eg a cut on a finger.

The patch, particularly a patch for application to a finger, may be formed with protruding tabs which can be wrapped around the part of the body to which the patch is applied, so as to assist in retention of the patch. In a particularly preferred embodiment of such a patch, a patch for application to a finger (or thumb) has a pair of lateral tabs which in use are wrapped laterally around the finger and a terminal tab which in use is wrapped over the end of the finger and the finger nail. Such a terminal tab may also prevent ingress of dirt or other material under the finger nail. This may be beneficial in, for example, gardening activities or the like.

Patches for application to the underside of a finger are preferably formed with one or more lateral slits or waisted portions at positions corresponding to the interphalangeal joints. This reduces any tendency for the patch to inhibit movement of the joints.

The patch according to the invention may be coated on the surface applied to the skin with any suitable adhesive, ie an adhesive which gives the requisite degree of adhesion and which is non-toxic and non-allergenic. Ideally, the degree of adhesion should be such that the patch remains in place for the duration of the user's task, eg the duration of a working day or part-day or shift. Nonetheless, the patch should be relatively easily removable at the end of the task. In general, the patch will be a disposable item.

As described above, the patch is preferably supplied with a masking tape or paper over the adhesive surface, much in the manner of a sticking plaster or the like. Patches may be packaged individually or, for suitably shaped patches, in a continuous package, eg a roll, individual patches being separated by lines of weakness such as perforations.

The patch may be shaped for application to various parts of the body, most commonly those parts used in the manipulation or gripping of objects. Thus, the patch may be shaped for application to a finger, to the palm of the hand, or to the whole underside of the hand (ie palm and one or

more fingers). In general, one or more patches according to the invention need be affixed only to those areas of the skin which are actually used in the particular operation being carried out, eg only to the thumb and first and second fingers of one hand in the case of manipulation of small objects on a production line.

Patches according to the invention may be packaged in multiples of one form of patch, or sets of different patches may be packaged and sold together.

According to another aspect of the invention, there is provided a set of self-adhesive patches, the patches constituting the set being dimensioned and configured for application to co-operating parts of the user's body. For example, a set of patches may comprise separate patches dimensioned to fit some or all of the fingers of a hand and optionally a patch for application to the palm of that hand. Another set of patches might comprise patches to fit the soles of the left and right feet.

Although the patch according to the invention will generally always have some protective effect, it may also be used in circumstances in which the primary requirement is for an improvement in grip. Apart from the manipulation of objects in industrial processes, such circumstances could include the use of the patch in sports, eg to improve the wearer's grip on a ball or bat or the like (eg a golf club). Another such application is rock climbing. A use in which both protection and grip are important would be the application of suitably shaped patches to the soles of the feet, for use around swimming pools.

In order to further enhance the gripping properties of the patch, the patch may be formed with grip-enhancing formations, eg protrusions such as ribs or pimples, on its surface.

According to another aspect of the invention, a method for improving a user's grip on an object or surface with which the user comes into contact, or preventing damage to the user's skin caused by contact with the object or surface, comprises application, to a part of the user's body which comes into contact with the object or surface, of a self-adhesive patch dimensioned and configured to fit that part of the user's body.

The invention will now be described in greater detail, by way of illustration only, with reference to the accompanying drawings, in which

Figure 1 is a plan view of a disposable skin protector in the form of a self-adhesive patch according to the invention, for application to a finger;

Figure 2 is a side view (not to scale) of the skin protector of Figure 1;

Figure 3 is a plan view of a second embodiment of the present invention, again for application to a finger;

Figure 4 shows a side view of a finger to which the embodiment of Figure 3 is applied;

Figure 5 shows a hand to which are affixed three patches of the general form shown in Figure 1;

Figure 6 is another view of the hand of Figure 5, showing how the patches facilitate manipulation of a small object;

Figure 7 is a further view of the hand of Figure 5, this time showing how the patches facilitate gripping of an object, in this case a ball;

Figure 8 is a view, similar to Figure 5, of a hand to the palm of which another embodiment of a patch according to the invention has been applied;

Figure 9 is another view of the hand of Figure 8, showing how the patch facilitates gripping of an object, in this case a sports racquet;

Figure 10 is a view of the sole of a foot to which a further embodiment of the invention has been applied;

Figure 11 shows a pair of feet to which patches similar to that of Figure 10 have been applied, illustrating how the patches protect the feet during walking; and

Figure 12 shows patches broadly similar to those of Figure 11 applied to the feet of an infant.

Referring first to Figures 1 and 2, a disposable skin protector is generally designated by the numeral 10 and is configured and dimensioned for application to a thumb or finger, eg an index or second finger. The protector 10 is in the form of a patch 11 of woven textile material formed on one side with a plurality of spots 12 of plastics material. The other side of the patch 11 is coated with a layer of adhesive 13 and a release film 14 with a protruding tab 14a. The protector 10 has a thickness of only about 1mm, the thicknesses of the components being exaggerated in Figure 2 for clarity.

In use, a user applies a protector 10 to, say, each of the thumb, index and second fingers of each hand (see Figure 5). In each case, the user simply removes the release film 14 by means of the tab 14a and presses the patch 11 onto the thumb or finger. The applied protectors 10 then protect those digits during the manipulation of objects, for instance on an industrial production line (as shown in Figure 6), and also improve the user's grip on the objects. The protectors 10 may also be used purely to improve grip, eg on a ball such as a cricket ball, as shown in Figure 7.

A skin protector 20 of somewhat different shape is shown in Figure 3. This is also intended for application to a finger but is provided with a pair of laterally projecting tabs 21,22 and also a terminal tab 23. The protector 20 is applied to a finger in the same way as described above, but with the terminal tab 23 being wrapped over the end of the finger and the lateral tabs 21,22 being wrapped around the finger (see Figure 4).

Figure 8 shows a skin protector 30 shaped for application to the palm of a hand. Such a protector may improve the user's grip on an object, the example illustrated in Figure 9 being a sports racquet.

Finally, sole shaped skin protectors 40,50 are shown in Figures 10 to 12. The protector 40 shown in Figure 10 is suitable for application to an adult foot, a pair (right and left) of such protectors 40 protecting the feet (and enhancing the grip of the feet) during walking, as shown in Figure 11. Figure 12 shows a smaller sole protector 50 suitable for infants. In both cases, the sole protectors 40,50 may be useful in environments such as the surroundings of swimming pools or on a beach,

to prevent slippage and/or damage to the feet caused by sharp objects.

Claims

1. A self-adhesive patch dimensioned and configured for application to a particular part of a user's body.

2. A patch as claimed in Claim 1, which is formed from textile material.

3. A patch as claimed in Claim 1 or Claim 2, wherein the patch has grip-enhancing formations on its surface.

4. A patch as claimed in any preceding claim, which is coated on one side with adhesive to which is applied a release film or paper which is removed immediately prior to use.

5. A patch as claimed in any preceding claim, which is formed with projecting tabs which, in use, are wrapped around the body part to which the patch is applied.

6. A patch as claimed in Claim 5, which is dimensioned and configured for application to a finger and is provided with a terminal tab wrapped, in use, over the end of the finger and a pair of lateral tabs wrapped, in use, around the finger.

7. A patch as claimed in any one of the preceding claims, which is dimensioned and configured for application to a finger.

8. A patch as claimed in claim 7, which is formed with one or more lateral slits or waisted portions at positions corresponding to the interphalangeal joints.

9. A patch as claimed in any one of Claims 1 to 5, which is dimensioned and configured for application to the palm of a hand.

10. A patch as claimed in any one of Claims 1 to 5, which is dimensioned and configured for application to the sole of a foot.

11. A set comprising a plurality of self-adhesive patches as claimed in any one of claims 1 to 5, the patches constituting the set being dimensioned and configured for application to co-operating parts of the user's body.

12. A method for improving a user's grip on an object or surface with which the user comes into contact, or preventing damage to the user's skin caused by contact with the object or surface, comprising application, to a part of the user's body which comes into contact with the object or surface, of a self-adhesive patch dimensioned and configured to fit that part of the user's body.

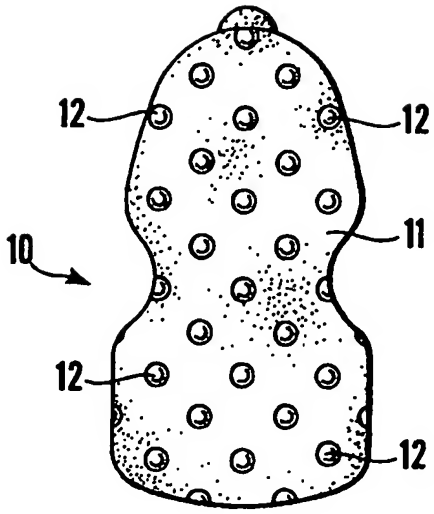

Fig.1

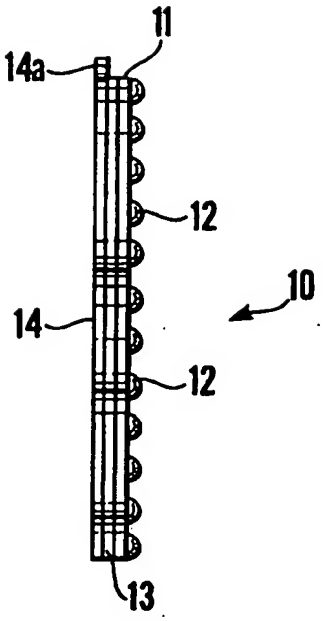

Fig.2

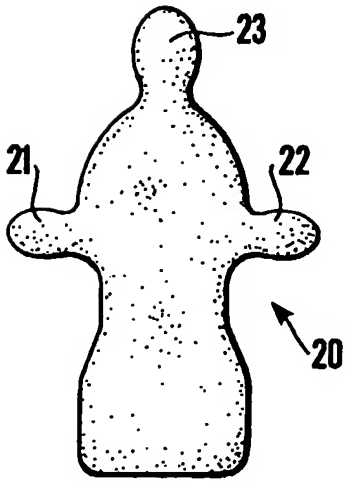

Fig.3

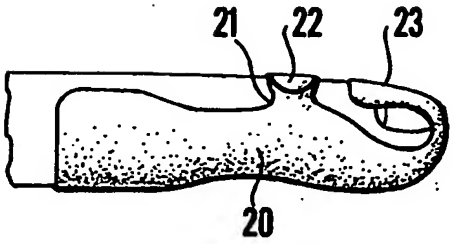

Fig.4

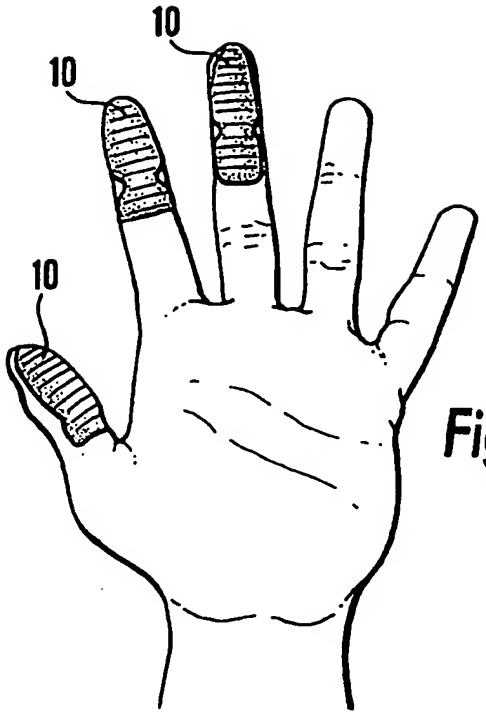

Fig.5

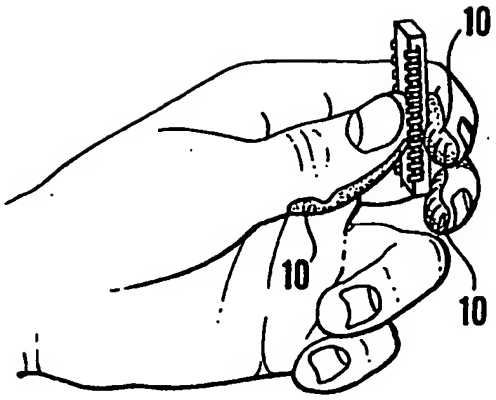

Fig.6

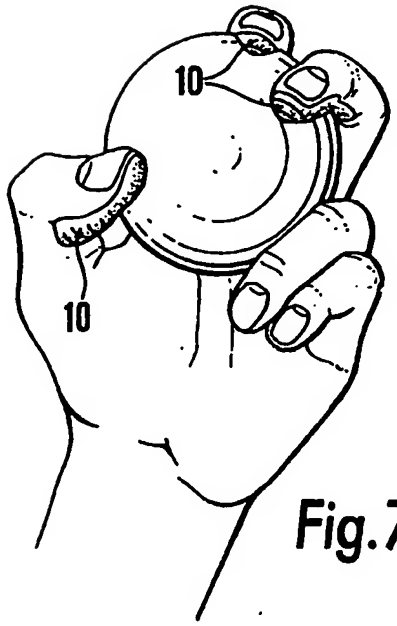

Fig.7

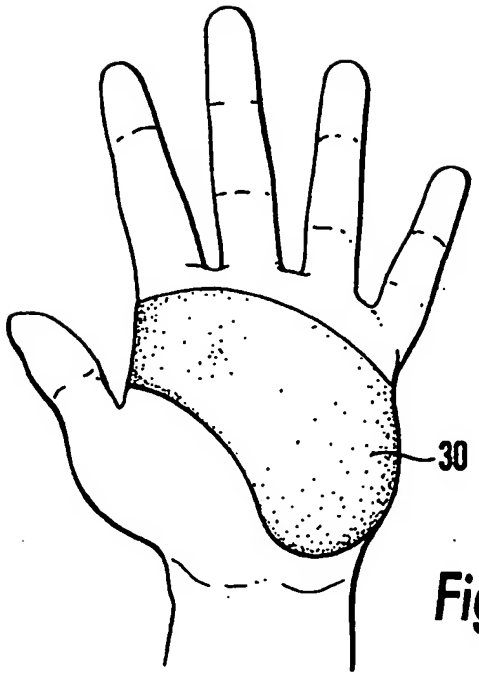

Fig.8

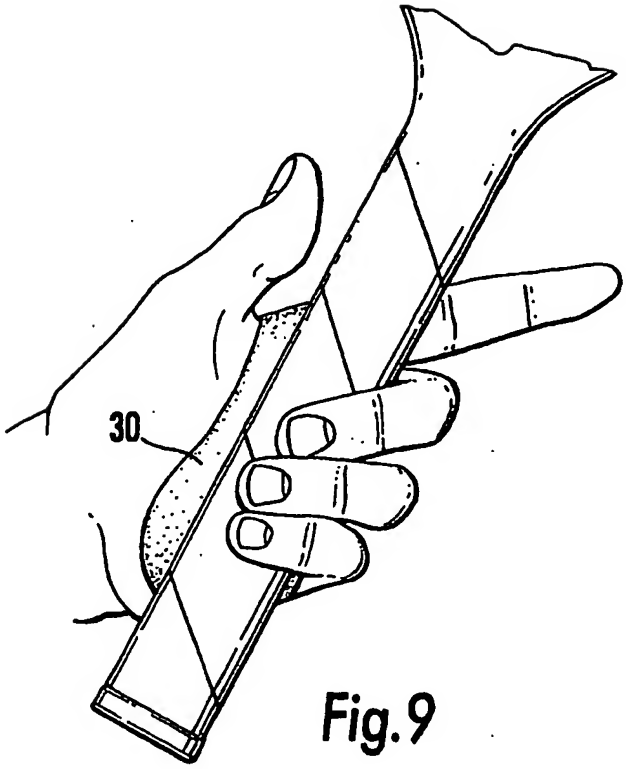

Fig.9

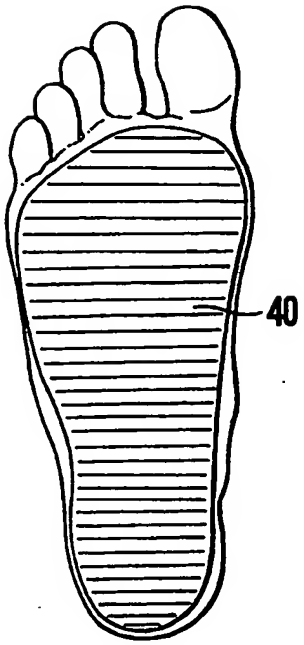

Fig.10

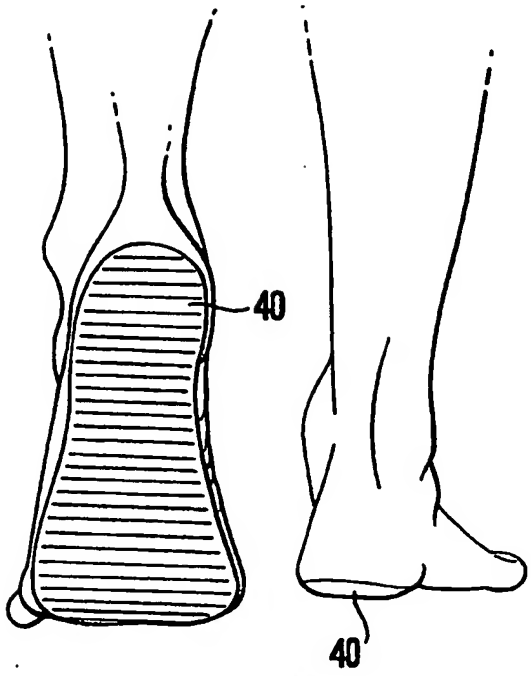

Fig.11

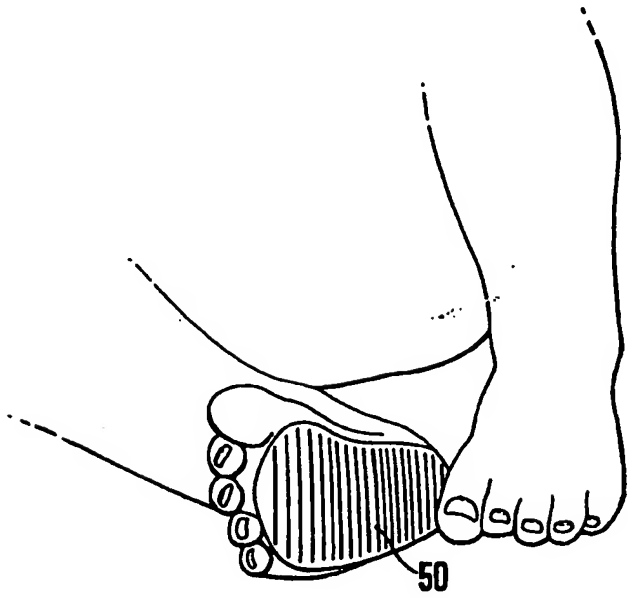

Fig.12

INTERNATIONAL SEARCH REPORT

National Application No
PCT/GB 97/03026

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 A41D13/08

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 A41D A63B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 547 465 A (D. J. POWELL) 20 August 1996 see column 2, line 29 - column 3, line 12; figures 1-3	1,4,7,12
X	DE 24 30 092 A (LIPA LIZENZ-UND PATENTVERWERTUNGSANSTALT) 2 January 1976 see page 5, last paragraph - page 7, paragraph 1; claims 1-7; figures 1-3	1-3,12
X Y	US 3 985 383 A (J. L. YONKERS) 12 October 1976 see column 1, line 56 - column 2, line 22 see column 2, line 48 - column 4, line 19; figures 1-6	1,3,4, 11,12 1
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Date of the actual completion of the international search	Date of mailing of the international search report
20 February 1998	02/03/1998

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Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5547465 A	20-08-96	NONE	
DE 2430092 A	02-01-76	NONE	
US 3985383 A	12-10-76	NONE	
US 5075144 A	24-12-91	JP 3234802 A	18-10-91